USER MANUAL

PHILLIPS AEROSPACE

OVER-VOLTAGE PROTECTION MODULE USER MANUAL

782-1000

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Obligations under this warranty shall be limited to repair or replacement, at Phillips' discretion, of any product or part thereof which has been returned by the original purchaser with transportation prepaid and, upon examination by Phillips, found to be defective. Phillips assumes no responsibility for loss or damage to equipment being returned for repair or replacement under the terms of this warranty. Equipment, which, upon examination by Phillips, requires repair and replacement of parts thereon as a result of improper installation, misuse, unauthorized alterations or repairs, or user negligence, will have such repairs or replacement of parts made at then current rates.

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Please notify the Phillips sales department at 626-855-4600 to obtain a Return Material Authorization (RMA) number prior to return of a product under the terms of this warranty. Notification is to include the Model and Serial numbers of the product along with full details of the problem. Modules returned should clearly show the RMA on the outside of the package.

PREPRATION FOR RESHIPMENT

If the module is to be shipped separately it should be enclosed in a suitable water and vapor proof anti static bag. Heat seal or tape the bag to insure moisture-proof closure. When sealing the bag, keep trapped air volume to a minimum.

The shipping container should be a rigid box of sufficient size and strength to protect the equipment from damage. If the module was received separately from a Phillips system, then the original module shipping container and packing material may be re-used if it is still in good condition.

OVP USER MANUAL

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AMENDMENT NOTICE

Phillips Aerospace makes every attempt to provide up-to-date manuals with the associated equipment. Occasionally, changes are made to the equipment wherein it is necessary to provide amendments to a manual. If any amendments are provided for this manual they are printed on colored paper and will be provided with the module and the manual.

NOTE

The contents of any amendment may affect operation, maintenance, or calibration of the equipment.

INTRODUCTION

This manual describes the operation and use of the Phillips Model Over Voltage Protection module Part Number 782-1000.

Contained within this manual are the physical and electrical specifications, installation and startup procedures, functional description, and configuration and programming guidelines to adequately use this produce.

This manual is based on a low level register access, and is written in such a manner to provide understanding to the user based on this type of access. If a driver is provided, please refer to the driver documentation for instruction using the higher interface provided by the driver.

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1 GENERAL DESCRIPTION

1.1 PURPOSE OF EQUIPMENT

The Phillips Aerospace Over Voltage Protection (OVP) module protects a load from critical damages that might be caused by high in put voltages. The module contains a solid-state switch that opens when the main input voltage is higher than the specified limit. It is activated when the main voltage is lower or equal to the limit. Some modules also include an isolation relay the physically disconnects the load from the power supply, positive and negative leg current shunts for current measurement, and a remote control and monitoring capability.

1.2 SPECIFICATIONS OF EQUIPMENT

- Power: 12v @ 500mA
- Connectors:
  - In/Out: Banana Jacks
  - Shunt: Tip Jacks
  - Remote Control:
    - Isolation Relay
    - Reset Command
    - Fault Indication
    - Connector: Signatron 2MJ-20416000

- Capacities:
  - -1 Configuration: 40VDC @ 10A
  - -2 Configuration: 190VDC @ 11A
  - -3 Configuration: 40VDC @ 40A
  - -4 Configuration: 40VDC @ 3A

- Voltage Trip Accuracy: +/- 1%
- Tresponse*: 500usec * (over-voltage condition to lines open)
- Shunts:
  - -1 Configuration: 0.010 Ω @ 1%
  - -2 Configuration: 0.010 Ω @ 1%
  - -3 Configuration: 0.005 Ω @ 1%
  - -4 Configuration: 0.250 Ω @ 1%

- Mechanical
  - Dimensions: 1.75”H x 7.8”D x 8.25”W

- Environmental

  The environmental specifications of the module are:

Operating Temperature:	0°C to +55°C
Storage Temperature:	-40°C to +75°C
Humidity:	<95% without condensation

2 INSTALLATION

2.1 UNPACKING AND INSPECTION

In most cases the OVP is individually sealed and packaged for shipment. Verify that there had been no damage to the shipping container. If damage exists then the container should be retained, as it will provide evidence of carrier caused problems. Such problems should be reported to the carrier immediately as well as to Phillips. If there is no damage to the shipping container, carefully remove the module from its box and anti static bag and inspect for any signs of physical damage. If damage exists, report immediately to Phillips.

2.2 HANDLING PRECAUTIONS

The OVP contains components that are sensitive to electrostatic discharge. When handling the module for any reason, do so at a static-controlled workstation, whenever possible. At a minimum, avoid work areas that are potential static sources, such as carpeted areas. Avoid unnecessary contact with the components on the module.

Opening of the OVP shielded protective cover voids the manufacturer's warranty. Do so only under direction of the manufacturer.

1.1 INSTALLATION AND USE OF OVP

CAUTION:	Read the entire Users Manual before proceeding with the installation and application of power.

1. To power the OVP module, connect the supplied AC Wall Adapter to JP1. POWER LED will turn on when the unit is powered.

2. Connect input voltage source to the V POS IN (J1) and V NEG IN (J2). Refer to Table 1 for input voltage limitations.

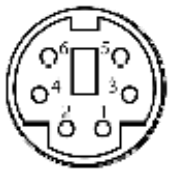
3. Connect output, V POS OUT (J3) & V NEG OUT (J4) to the UUT.

4. To find out the current passing through the OVP, connect a pair of tip plugs from external multi-meter across High Shunt (J6) red and black tip jacks, or Low Shunt (J7) red and black tip jacks to read positive leg or return leg current.

5. With the shunt voltage outputs obtained from previous step, use Ohm's law (I = V/R) and divide the shunt resistance provided in Table 1 to obtain the current passing through the UUT.

6. Depending on the module's trip voltage, the module will disconnect output voltage to the load and the FAULT LED will come on indicating a fault condition. The fault condition will remain until the reset button is preset and the fault voltage state drops to within an acceptable range. **Note:** the trip condition will occur at +/-1% of the specified trip voltage.

7. Units with external control have a 6-pin DIN connector on the back panel to support remote reset, remote fault monitor, and to control the isolation relay. To use these features, connect a male 6-pin DIN connector cable to J5 Control. Refer to Figure 1 for pinout details.



Pins 1 / 2 = relay control high / low
Pins 3 / 4 = reset command contact
Pins 5 / 6 = fault indicator out high / low

Figure 1. 6-pin DIN connector pin-out

8. To clear the FAULT LED when such a condition occurs, a reset is necessary re-connect the load to the power supply. Press the RESET button momentarily until FAULT LED turns off to reset the OVP.

9. Reset can also be performed remotely by performing external reset. When performing external reset using a DIN cable connected to the module, simply short pins the reset command pins together momentarily to clear the fault.

10. Using the DIN cable, it is possible to remotely monitor the FAULT condition. When a FAULT occurs, a voltage of 9.5V will appear across the J5 fault indicator pins.

11. Using the DIN cable, it is possible to remotely control the RELAY to enable power output to the load. To turn on the relay, apply +12V to J5 relay control high and low. The relay coil draws approximately 150mA, so make sure the source driver is compatible.